EPA Comments on the Virginia
Draft Phase I Watershed Implementation Plan

This document provides the Secretary of Natural Resources, Department of Environmental Quality (DEQ) and Department of Conservation and Recreation (DCR) with the results of the U.S. Environmental Protection Agency's (EPA) evaluation of Virginia's draft Phase I Watershed Implementation Plan (WIP). The document expands upon the conference call between DEQ, DCR, and EPA staff on September 23, 2010 and the letter and WIP Evaluation Fact Sheet that Regional Administrator Shawn Garvin sent to Secretary Domenech on September 24. This enclosure describes in more detail EPA's key areas of concern and ways Virginia can improve the Phase I WIP. It is anticipated that this enclosure coupled with subsequent meetings and calls among EPA, DEQ, and DCR staff will provide sufficient detail for Virginia to improve its final WIP due to EPA on November 29, 2010, and the Phase II WIP in 2011.

EPA has been working with the Secretary of Natural Resources' office to confirm a management-level meeting with DEQ and DCR for later in October. Members of the EPA WIP Evaluation Team are available to discuss feedback and next steps even with your staff sooner so that we can narrow down the number of issues needing managers' resolution at the late October meeting. EPA is also willing to review revised WIP scenario runs starting as early as this week.

Section I. Overview of WIP

Thank you for the time and effort DEQ and DCR have invested in the development of Virginia's WIP. EPA appreciates Virginia's partnership in this key step to develop the Bay TMDL. Our team looks forward to working with Virginia towards a stronger Implementation Plan, a sound TMDL, and a healthier Chesapeake Bay watershed.

When reviewing each of the seven Bay jurisdictions' draft WIP submissions, EPA evaluated whether the allocations assigned by the jurisdiction met the July 1 and August 13 nutrient and sediment allocations, whether the jurisdiction provided assurance that the strategies outlined in the WIP will achieve and maintain the wasteload and load allocations (WLAs and LAs), and whether the WIP included sufficient information for permit writers to develop permits that meet the TMDL WLAs. These are three critical areas that each jurisdiction's WIP must address.

Starting with the numbers, EPA commends Virginia for submitting a WIP input deck on September 3 that was 12% below the statewide sediment allocations announced August 13. However, the input deck did not meet the July 1 nutrient allocations: nitrogen and phosphorus were 6% and 7% over, respectively. While some individual basins met the July 1 basin-specific allocations, the James River and others did not.

EPA appreciates Virginia's commitment to meet the 60% interim target in the James River basin by 2017, as well as Virginia's 4-part strategy for revisiting the chlorophyll-a

water quality standards. EPA also recognizes that Virginia shortened this process from 7 to 5 years (3 years for study plus up to 2 years for the rulemaking process to make any changes to the water quality standards). However, the four-part strategy and nutrient allocations do not meet the expectations that EPA set forth in an August 24 conference call with DEQ and DCR. As Jon Capacasa stated on that call, the TMDL allocations must meet existing water quality standards (any potential changes to the chlorophyll-a standard will not be complete by December 2010). EPA also stated on August 24 that we expect Virginia to commit to retrofitting and optimizing wastewater treatment plants in the James River Basin. However, Virginia's WIP does not reflect these expectations. Therefore, absent additional actions to reduce nutrients in the final WIP, EPA expects to maintain backstop wasteload allocations for point sources in the final TMDL to close any gaps between Virginia's proposed allocations and the July 1 allocations of 23.5 million pounds per year nitrogen and 2.3 million pounds per year phosphorus delivered to the Bay.

Shifting to the gap-filling strategies, Virginia's draft Phase I WIP has key deficiencies in meeting EPA expectations and subsequently needs significant strengthening. The draft WIP did not provide assurance that the programs and proposed gap-filling strategies will result in practices in place by 2017 which would achieve the nutrient 60% of the necessary nutrient and sediment reductions. The gap-filling strategies for agriculture, for instance, rely on existing, largely voluntary programs. The WIP does not include mechanisms that would support high implementation rates despite proposed legislative and regulatory changes presented to Virginia's WIP Stakeholder Advisory Group on August 24, 2010. The lack of drivers – legislative, regulatory, or otherwise – may make some of the ambitious goals difficult to meet.

Virginia proposes to achieve nutrient reductions through an expanded Nutrient Credit Exchange (NCE). While this is a bold new idea that EPA is willing to explore, key deficiencies in this strategy exist. First, it relies on septic systems and urban stormwater to purchase credits, with no regulatory drivers to create a demand for credits within a specified time period. Second, the WIP is not transparent regarding either the stringency of the allocations for stormwater and septic systems or the extent to which the state expects homeowners and communities with onsite systems and impervious lands to purchase credits.

Because Virginia's draft WIP does not meet the July 1 nutrient allocations or provide assurance that nutrient and sediment reductions can be achieved and maintained, EPA proposed moderate level backstop allocations in the draft TMDL released September 24, 2010. The remainder of this document describes these deficiencies as well as the backstop allocations in greater detail. EPA would like to further discuss opportunities for improvement during upcoming meetings and conference calls with Virginia colleagues. EPA is committed to working with the Commonwealth to strengthen the Phase I WIP and remove or relax the backstop allocations.

Section II: Addressing Sector Area Concerns & Opportunities for Improvement

Agriculture: Serious Deficiencies in Gap-Filling Strategies

Strengths
Section 6 of the draft WIP clearly identifies the agriculture best management practices (BMPs) and implementation rates to meet the 2017 and 2025 goals. EPA encourages Virginia to replicate Table 6.4-1 and the subsequent discussion for other sectors of the final WIP.

EPA appreciates that Virginia's WIP discusses efforts to improve tracking, reporting and verification of nutrient and sediment controls, such as the legislation enacted by the General Assembly in 2010 improve tracking of voluntary BMPs. EPA expects findings and recommendations from the report due in November 2010 to be incorporated into the final Phase I WIP. The explanation of the new, electronic Virginia Agricultural BMP Tracking Program is also a strength of the WIP. While it is good to see that the system will be compatible with EPA Chesapeake Bay Program Office data nodes, Virginia should ensure that it is also consistent with EPA's BMP definitions and expectations for verification.

Areas for Improvement
The draft Phase I WIP did not include regulatory and legislative changes to increase implementation of priority practices that were described in the draft WIP overview and discussed at the August 24 Stakeholder Advisory Group meeting. The WIP submitted September 3 instead indicates that Virginia will establish "an implementation expectation" with no clear details on how that "expectation" will be carried out. As written, EPA has little assurance that some of the actions, such as ambitious goals for fencing and nutrient management, will be achieved and maintained without the regulatory underpinning that was discussed on August 24.

EPA expects the final WIP to include a detailed strategy outlining how and when the large jumps in implementation rates in the WIP compared to 2009 will occur. For example, will farmers in Virginia achieve livestock exclusion on 95% of stream miles through increases in incentive programs, increased outreach efforts, or other drivers? Even if the increases in implementation are not expected to occur until after 2017, the WIP should include any program-building milestones such as studies, legislative proposals, or cost-share program enhancements that are expected to occur within the next 7 years. These timelines would provide EPA with assurance that sudden increases in implementation rates would occur between 2017 and 2025. Virginia should also consider revising nutrient management program requirements to include the practices in the WIP input deck as a way to demonstrate reasonable assurance through enforceable or otherwise binding commitments.

The Phase I WIP states, "The state will consider broader incentives and other mechanisms for nutrient management plans," and, "Prior to 2017, further actions will be taken to increase the quantity and distribution of private certified planners," but offers no details on what these actions are. Based on the 2009 Agriculture BMP report (page 65 of

your WIP), Virginia will need $22 million starting in 2011, with increases each year up to $63 million in 2025 for BMP cost share funding. However, the WIP does not include a strategy and schedule for addressing program funding and staffing gaps.

EPA recommends that Virginia develop a detailed Manure Management Strategy with innovative approaches to provide value-added products from manure and poultry litter while also reducing nutrients reaching Chesapeake Bay waters. Such strategies could be particularly valuable in the counties that comprise the Shenandoah Valley. Part of the Strategy could include engaging poultry integrators in a binding agreement to provide support in managing litter. Other key aspects could include evaluating Virginia's current manure transport program to determine whether it could be expanded.

Virginia's final WIP should include additional details on procedures for ensuring compliance with current regulatory programs (e.g., compliance procedures, adequate staffing levels, frequency of inspections, enforcement procedures, etc.) and verifying that practices are properly designed, installed and maintained. Specifically, the final WIP should discuss in detail compliance with VPA permits in addition to the information currently provided on annual inspections. Furthermore, given that nutrient management is a top practice for achieving significant nutrient reductions, verification and assurance that nutrients are applied according to recommendations for rate, timing, form, and method are essential. These procedures, actions and timeframes for filling gaps in compliance and verification are critical for building assurance that agricultural nutrient and sediment reductions will be achieved.

EPA is concerned regarding the potential water quality impacts from small, currently unregulated, dairy operations. From our extensive field experience, we question whether many of the small dairy operations that fall below the CAFO threshold for medium size operations have, and are fully implementing, appropriate preventative plans to address manure management, erosion and sedimentation, and conservation issues. EPA requests that the final WIP include information on how small dairies are implementing programs that protect water quality and/or contemplate developing an appropriate environmental protection program for this sector of the dairy industry. EPA also recommends that Virginia consider expanding the VPA program to address small dairies as a way to demonstrate reasonable assurance through enforceable or otherwise binding commitments.

In the final WIP, EPA recommends including options for better managing and protecting against phosphorus saturated soils in animal agriculture dominated regions such as the Shenandoah Valley. Incorporating enhancements to existing BMPs or adding new ones such as improved phosphorus management with nutrient management planning could also help to address Virginia's phosphorus reduction shortfalls.

Lastly, to achieve additional load reductions from the agricultural sector, EPA recommends that Virginia consider requiring measures identified in EPA's *Section 502 Guidance for Federal Land Management in the Chesapeake Bay Watershed* released on May 12, 2010 and including efforts to improve horse pasture management in the WIP.

Stormwater: Serious Deficiencies in Gap-Filling Strategies

Strengths
The development of the Stormwater Management Enterprise Website will provide a critical management tool for Virginia's stormwater regulations (currently undergoing revision) by significantly improving stormwater BMP tracking. We also commend Virginia for the extensive effort in dividing stormwater loads between NPDES-regulated sources (e.g., MS4, industrial regulated stormwater) and currently unregulated sources.

Areas for Improvement
Stormwater discharges are a significant cause of water quality impairment in the Chesapeake Bay Watershed and one of the only sources of pollutants with increasing loads to the Bay and its tributaries. The three provisions that EPA expects to see within the final Phase I WIP in order to have assurance that reductions from existing urban acres can be achieved and maintained are: (1) Strong, detailed performance standards for new development and redevelopment that incorporate stable hydrology as the management objective; (2) Strong, detailed retrofit programs with aggressive performance standards and implementation schedules; and (3) Mechanisms to regulate additional urban stormwater discharges. Even with the benefit of these additional provisions, EPA still questions the feasibility of Virginia's proposal to reduce nitrogen and phosphorus loads by 45% and 59%, respectively, compared to 2009 loads.

The urban stormwater reductions proposed in the WIP cannot be met without a significantly more robust set of stormwater requirements. The WIP appears to rely heavily on Virginia's existing permitting program and proposed stormwater regulations, which EPA believes fall short of requiring specific environmental objectives and retrofit requirements that will result in the necessary quantifiable nutrient and sediment reductions. Given that Virginia's attempts to revise the Commonwealth's regulations last year were unsuccessful, EPA expects the final WIP to include contingency actions in the event that the new regulations are not promulgated on schedule.

In order to prevent increases in loads from new and redevelopment in MS4-regulated areas, a strong, enforceable performance standard must be applied to these discharges. EPA believes that such a standard is likely to be most effective if it is based on a volume or flow metric and formulated as a retention (not detention) standard with the objective of stable hydrologic conditions. Also, in order to prevent increases in loads from new and redevelopment outside of MS4-regulated areas, a strong performance standard must be applied to these discharges as well. The WIP should identify which mechanism (state rule, construction general permit, and/or residual designation authority) the state would use to apply appropriate standards to this wider universe of discharges.

As mentioned in the overall comments on page 2, EPA has serious concerns with assuming that a revised Nutrient Credit Exchange will allow the Commonwealth to meet its urban stormwater allocations. For trading to be successful, the state must first have stringent requirements and clear baselines for nutrient and sediment loads from urban

lands. EPA strongly recommends that an urban stormwater trading program have aggressive, enforceable standards, which can serve as a baseline for generating credits. Further, EPA expects the final WIP to correct the discrepancies between the WIP document and input deck. The input deck submitted on September 3 with the draft WIP applies the E3 levels of management to all urban lands, but the WIP document does not clearly articulate this extremely aggressive level of stormwater control or how those controls would be applied to such lands.

Finally, all of these elements must have sufficient implementation schedules, accountability measures, enforceable provisions, and tracking and verification standards that meet EPA's expectations as described in its communications on September 11, 2008; November 4, 2009; December 29, 2009; April 2, 2010; and in a presentation to the Water Quality Goal Implementation Team on July 6, 2010.

Wastewater: Some Deficiencies in Gap-Filling Strategies

Strengths
The WIP clearly defines edge-of-stream and delivered loads from significant wastewater treatment plants (WWTPs) and provided the level of treatment for nitrogen and phosphorus by major basin. The WIP also explains that compliance with loading limits could be achieved either by purchasing credits from sources in the same basin (with the exception of the Eastern Shore, which can acquire credits from Potomac and Rappahannock) or by upgrading facilities with nutrient removal technologies. The WIP highlights that significant WWTPs will meet nutrient loading limits in 2011 through a combination of trades or upgrades. A description of the contractual agreements provides EPA with assurance that trades can be effectively utilized to meet WWTP loading caps.

Areas for Improvement
As discussed on page 2, EPA is concerned that the draft WIP does not include a commitment to retrofit and optimize WWTPs in the James River Basin. If the final WIP does not provide assurance for additional nutrient reductions, EPA expects to maintain backstop wasteload allocations for James River point sources in the final TMDL. These wasteload allocations (WLAs) would be incorporated into WWTP permit limits in the reissued Watershed General Permit which expires December 31, 2011.

If aggregate WLAs for non-significant WWTPs are to be used, the WIP will need to provide detailed information on how NPDES permits for these facilities will be written. EPA also expects confirmation in the final WIP as to whether it is Virginia's intent to include all 2000 + non-significant facilities under a general permit(s). Otherwise, EPA may consider establishing individual WLAs for all WWTPs to ensure that permit writers have necessary information to develop protective permit conditions.

EPA has concerns with how Virginia proposes to track, verify and report to EPA information regarding permit limits, compliance schedules, compliance, and annual discharges. Virginia stopped reporting information in PCS regarding annual load limits for nitrogen and phosphorus from the individual permits covered by the Watershed

AR0027149

General Permit at the time when the Watershed General Permit became effective. Furthermore, Virginia does not include information in PCS on compliance and construction schedules for facilities covered by the Watershed Permit that would indicate to EPA whether upgrades are occurring on pace to meet the 2017 and 2025 goals. EPA expects Virginia to report such information to PCS and track compliance with final nutrient loads and upgrade schedules. Finally, given that the 2-year milestones will be assessed from January 1 of each even-numbered year through December 31 of each odd-numbered year starting in 2012, Virginia should change their WWTP progress reporting process to align with the milestone's calendar year-based reporting schedule.

EPA also has concerns with the gap-filling strategies for achieving nitrogen reductions from onsite wastewater facilities, or septic systems. Virginia recognizes in the WIP that direct control of nitrogen from small onsite systems is difficult. However, the WIP onsite section makes no mention that in its WIP input deck submitted September 3, Virginia is proposing load allocations for onsite septic systems equivalent to 100% of systems being upgraded with advanced denitrification technology. The WIP proposes using loans to promote denitrification upgrades, but not all systems are anticipated to receive loans. The WIP document also proposes that onsite septic systems may meet their stringent load allocations by purchasing offsets on an expanded NCE. However, the document indicates that only new systems would be expected to purchase credits. Given the discrepancies between the WIP document and input deck, as well as the lack of inclusion of any regulatory driver for existing onsite systems, EPA has determined that the draft WIP lacks sufficient assurance that all homeowners with onsite septic systems will either upgrade their systems or purchase credits on a schedule to meet the 60% interim target by 2017 or the TMDL load allocations by 2025. Finally, there is no discussion of onsite inspections or audits to verify the implementation or proper maintenance of septic systems.

Growth

As described above, the WIP does not provide EPA with assurance that the NCE will have the capacity to provide offsets to all new or increasing sources of nitrogen, phosphorus or sediment. The WIP notes that the onsite systems are a growing source of nitrogen to the Bay in Virginia, but EPA does not believe that an expanded NCE will be effective for this sector. The state's strategy relies on septic systems and urban stormwater to purchase credits without any regulatory drivers to create a demand for credits within a specified time period. The WIP lacks transparency regarding the allocations for stormwater and septic systems and obscures the extent to which credits will need to be purchased for onsite systems and impervious surfaces. EPA does acknowledge, however, that the WIP includes a schedule and next steps for expanding the NCE. In order for EPA to find the final WIP to be credible, there should be significantly enhanced level of detail for the proposed expansion to Virginia's trading program.

Section III: Backstop Allocations

In order to meet the 2017 target and 2025 nutrient and sediment allocations, EPA has proposed moderate level backstop allocations for Virginia in the draft Chesapeake Bay TMDL. To avoid the inclusion of backstop measures in the final TMDL, EPA encourages Virginia to submit a significantly improved final Phase I WIP that addresses the concerns raised in this evaluation. We welcome the opportunity to work closely with the Commonwealth over the next two months.

Moderate level backstop allocations for Virginia include:

- WWTPs:
  - 4 mg/L TN and .3 mg/L TP and design flow for significant municipal plants, consistent with most aggressive WIP proposal
- MS4s:
  - 50% of urban MS4 lands meet aggressive performance standard through retrofit/ redevelopment
  - 50% of unregulated land treated as regulated (resulting in 25% of unregulated land meeting aggressive performance standards)
  - Application of residual designation authority as necessary
- Construction:
  - Erosion and sediment control requirements on all lands subject to Construction General Permit
- CAFO Production Areas:
  - Full implementation of waste management, barnyard runoff, and mortality composting controls
  - Precision feed management for all animals.
  - Same standards apply to AFOs not subject to CAFO permits except no feed management on dairies
  - Application of residual designation authority as necessary
- Additional adjustments to agriculture nonpoint sources as necessary to meet July 1 and August 13 nutrient and sediment allocations

Section IV: Other Federal Backstop Actions

Pursuant to the December 29, 2009 letter from Regional Administrator Shawn Garvin to the Chesapeake Bay Principals' Staff Committee, EPA may consider applying other federal backstop actions in addition to those listed in Section III to ensure that jurisdictions develop and implement sufficient WIPs and achieve nutrient and sediment load reductions as evidenced through two-year milestones.

Section V: Other Suggested Improvements/Final Comments

In a June 11, 2010 letter to the Principals Staff Committee, EPA indicated that it would include for each jurisdiction a separate Temporary Reserve for both nitrogen and phosphorus for the purposes of WIP development and incorporating contingency actions. The Temporary Reserve is based on possible changes to nitrogen and phosphorus allocations that could result from two forthcoming refinements to Phase 5.3 of the Chesapeake Bay Program Watershed Model.

In his July 1 letter to the Principals Staff Committee communicating the major basin and jurisdiction nutrient allocations, EPA Regional Administrator Shawn Garvin included an additional 5% reserve. The jurisdictions are expected to account for this reserve as an element of their contingency actions in their Phase I WIPs, in the event that the 2011 refinements to the Phase 5.3 Chesapeake Bay Watershed Model result in draft allocations lower than those provided on July 1, 2010. EPA expects Virginia to add contingency actions based on this reserve in the final Phase I WIP. Depending on the results of the 2011 model refinements, the Temporary Reserve will be revised or removed as appropriate during the 2011 Phase II WIP development process.

EPA also expects the final WIP to identify the load reductions that Virginia will achieve in each of its major basins every two years, starting in 2011. As stated in EPA's November 4, 2009 letter to the Chesapeake Bay Program Principals' Staff Committee and the April 2, 2010 *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans*, this schedule is necessary for EPA to assess whether 2-year milestones are on pace to achieve the 2017 and 2025 goals. If this information is not provided, EPA will assume constant, linear nutrient and sediment reductions between 2009, 2017 and 2025, and will assess two-year milestone commitments and progress accordingly.

Section VI: Closing

EPA's welcomes Virginia's willingness to work with EPA to address the deficiencies outlined in this letter in advance of the final TMDL. We look forward to the opportunity to meet with our Virginia colleagues to further explain our evaluation and to discuss ideas for strengthening the final Phase I WIP, due November 29, 2010.